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Fri 23 Feb 2001
Eff. Date 02/22/00

U.S. Army Corps of Engineers
PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)

TIME 11:18:18
TITLE PAGE 1

HANFORD: ER PROGRAM
REMEDIATION - 300 Area ACP
TRENCH MODEL - (Small)
REV. 1 (TRSM01)
300-22

Designed By: BHI - Estimating Group
Estimated By: BHI - Estimating Group

Prepared By: BHI - ESTIMATING

Preparation Date: 02/22/00
Effective Date of Pricing: 02/22/00

Sales Tax: 8.00%

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Release 5.30C

(Rev 1) Revised to incorporate comments from the 1999 Baseline Validation.

(Rev 0) This model was developed by copying the Retention Basin Model and revising it with the changes peculiar to this new model. The Retention Basin Model was developed around January of 1998. It was the first of the RA models to be updated/modified/corrected and was intended to be the basic model to be used for the development of the remaining remedial action MCACES models.

Currently in this Model:

1. Direct Distributable Rate = 22.38%
2. General & Administrative = 3.93%
3. Subcontractor Overhead and Profit Rates are as follows:
 - a. Field Overhead = 10%
 - b. Home Office Overhead = 3%
 - c. Profit = 7%
 - d. Bond = Calculated within each model
 - e. B&O Tax = 0.47%
4. Contingency Rate = 0% (Input later if desired)
5. The labor database is LABR00. ERC wages are per FY00-FY02 DWP Guidance dated 5/17/99, update 8/4/99 and IOM 069274. The HSSA rates are based on rates dated 9/1/99.
6. The equipment database used is EQ2000 (NAT99A with updated BHI equipment pool rates per FY00-FY02 DWP Guidance dated 5/17/99) entitled "Equip Rt EP1110-1-8, VIII, Jun99+B".
7. Unit pricing database used is UN9500 (NAT95A with incorporation of quotes to BHI and actuals) entitled "1995 National Unit Price Book +B".
8. Cost for Dust suppression water is excluded form this estimate. The use of water is not charged back to the specific site but is covered in the Distrib.
9. Some of the Labor Resource titles (craft title) changed over time. As sections are updated these titles may be updated but are still the same craft. The following is a crosstalk to those labor resources that have been re-titled;
Rad Con Tech = HAMTC-Radiological Control Tech = Health Physics Tech = Resource Code 10T25 in the Provisional Billing Rates.

Special Note #1

To satisfy procedural requirements items 1,2, 4, 5, 6 & 7 are subject to update before running model and issuing final results.

Special Note #2

Project approval of model applies to model structure/productivity/work approach/methodology/material pricing/unit pricing/resources, etc.
excluding items in special note #1 above.

Special Note #3

This model does have the capability to include the Environmental Restoration Disposal Facility (ERDF) transporation and disposal costs that are needed for Focus Fesability Studies (FFS) as well as other studies. To include the ERDF pricing select "yes" to the question on the input screen.

Baseline site cost model estimates will have the ERDF cost turned off. ERDF costs are estimated/included in the ERDF baseline and are to be EXCLUDED in the site remediation baseline.

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. HANFORD: ER PROGRAM
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	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>					
. HANFORD: ER PROGRAM					
<hr/>					
HANFORD: ER PROGRAM					
<hr/>					
	PRODUCTIVITY DURATION	18.0000 LS / 0.0556			1.0000 LS
<hr/>					
A1	0 Non-Contaminated Soil				
	Non-Contaminated Soil	N		187.0000	BCF
<hr/>					
A1	0 Non-Contaminated Soil				187.0000 BCF
<hr/>					
A10	0 Include ERDF Dispsl?, 1=yes 0=no				
	Include ERDF Disposal 1=yes 0=no	N		0.0000	YES/NO
<hr/>					
A10	0 Include ERDF Dispsl?, 1=yes 0=no				0.0000 YES/NO
<hr/>					
A3	0 Contaminated Soil				
	Contaminated Soil	N		320.0000	BCF
<hr/>					
A3	0 Contaminated Soil				320.0000 BCF
<hr/>					
A5	0 Top Excavation Length				
	Top Excavation Length	N		26.0000	LF
<hr/>					
A5	0 Top Excavation Length				26.0000 LF
<hr/>					
A6	0 Top Excavation Width				
	Top Excavation Width	N		14.0000	LF
<hr/>					
A6	0 Top Excavation Width				14.0000 LF
<hr/>					
A7	0 Bottom Area				
	Bottom Area	N		160.0000	SF
<hr/>					
A7	0 Bottom Area				160.0000 SF
<hr/>					
A8	0 GW Protection Smpls (S3,M21,L60)				
	GW Protection Smpls (S3,M21,L60)	N		0.0000	

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	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
. HANFORD: ER PROGRAM					
A8	0 GW Protection Smpls (S3,M21,L60)				0.0000 EA
A9	0 Depth of Excavation				
	DEPTH OF EXCAVATION	N	2.0000		LF
A9	0 Depth of Excavation				2.0000 LF
ABURDN0	Non Contaminated Soil - Reduced				
Non-Contaminated Soil	W A1	0 (	187.0000	/ Divide by	BCF
Convert to Cubic Yards	N		27.0000	* Multiply by	CF/CY
Swell Factor	N		1.1500)	* Multiply by	%
	N		1.0000		
ABURDN0	Non Contaminated Soil - Reduced				7.9648 LCY
ACSOILO	Contaminated Soil				
Contaminated Soil	W A3	0 (	320.0000	/ Divide by	BCF
Convert to Cubic Yards	N		27.0000	* Multiply by	CF/CY
Swell Factor	N		1.1500)	M (R) Multiply by	
	N		1.0000		
ACSOILO	Contaminated Soil				14.0000 LCY
ADISBRO	Hauling Distance for Borrow				
Hauling Distance for Borrow	N		2.0000		MILE
ADISBRO	Hauling Distance for Borrow				2.0000 MILE
AREAST0	Site Area				
Top Excavation Length	N	(	0.0000	N None	
Add 30 lf to each side	W A5	0 (	26.0000	+ Add to	LF
Top Excavation Width	N		60.0000)	* Multiply by	LF
Add 30 lf to each side	W A6	0 (14.0000	+ Add to	LF
	N		60.0000)	N None	
	N		0.0000)	U Round Up	LF
	N		1.0000		
AREAST0	Site Area				6364.0000 SF

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. HANFORD: ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>					
BORROW0 Borrow to Haul					
Volume of excavation	N	0.0000	N	None	
Contaminated Soil	W A3	0 (	320.0000	/ Divide by	BCF
Convert to Cubic Yards	N	27.0000)	M	(R) Multiply by	
10% allowance for compaction	N	1.1000			
<hr/>					
BORROW0 Borrow to Haul					13.0000 LCY
CONDUR0 Contaminated Duration					
Contaminated Soil	W ACSOIL0 (	14.0000	/ Divide by	LCY	
Excav. Rate @ 52 LCY/Hr x 8	N	416.0000)	U Round Up	LCY/DAY	
N	1.0000				
<hr/>					
CONDUR0 Contaminated Duration					1.0000 DAYS
CONTRK0 Contaminated Loads					
Contaminated Soil	N (	0.0000	N	None	LCY
	W ACSOIL0 (	14.0000)	/ Divide by		
	N	12.8700)	U Round Up	LCY/TRK	
N	1.0000				
<hr/>					
CONTRK0 Contaminated Loads					2.0000 LOADS
CYCLES0 Number of Cycles/Truck/Day					
Assume 50 Min. Hours	N (	50.0000	*	Multiply by	MIN/HR
8 Hrs/Day	N	8.0000	/	Divide by	
Total Cycle Time for Borrow	W TIMTOTO	12.6096)	D	Round Down	MIN
N	1.0000				
<hr/>					
CYCLES0 Number of Cycles/Truck/Day					31.0000 CYCLES
DAYPRO0 Total Project Duration					
Spread/Compact Soil Qty	N (	0.0000	N	None	
	W SPREAD0 (	13.0000	/	Divide by	
Productivity per Day (219 LCY/hr	N	1752.0000)	+	Add to	CY/DAY
Site Area	W AREAST0 (	6364.0000	/	Divide by	SF
Dryland Grass Productivity / Day	N (	348480.0000	*	Multiply by	SF/DAY
1 Tractor	N	1.0000)	N	None	
	N	0.0000)	+	Add to	
Total Excavation Duration	W DAYS 0	1.0000	+	Add to	DAY
Allowance for Mobilization	N (12.0000)	U	Round Up	DAY
N	1.0000				

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.	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>					
DAYPRO0 Total Project Duration					14.0000 DAY
<hr/>					
DAYS 0 Total Excavation Duration					
Non Contaminated Soil	W ABURDN0 (	7.9648	/ Divide by		LCY
Productivity per Day	N	416.0000	+ Add to		LCY/DAY
Contaminated Soil	W ACSOIL0	14.0000	/ Divide by		LCY
Productivity per Day	N	416.0000)	U Round Up		LCY/DAY
	N	1.0000			
<hr/>					
DAYS 0 Total Excavation Duration					1.0000 DAYS
<hr/>					
DURBORG0 Total Truck Hours					
Borrow to Haul	W SPREAD0	13.0000	/ Divide by		
Load/Haul Borrow Production Rate	N	219.0000	* Multiply by		LCY/HR
Number of Trucks Reqd for Borrow	W NUMTRK0	4.0000			TRKS
<hr/>					
DURBORG0 Total Truck Hours					0.2374 HRS
<hr/>					
ERDFQTO Tonnage of Waste to ERDF					
Include ERDF Dispsl?, 1=yes 0=no	W A10 0	0.0000	* Multiply by		YES/NO
Tonnage of Waste	W WASTON0	21.0000			TONS
<hr/>					
ERDFQTO Tonnage of Waste to ERDF					0.0000 TONS
<hr/>					
LNGSLA0 Long Slope Area					
N (	0.0000	N None			
N (	0.0000	N None			
N (	0.0000	N None			
Top Excavation Length	W A5 0	26.0000	* Multiply by		LF
	N	2.0000	- Subtract Next		
	N	3.0000	* Multiply by		
Depth of Excavation	W A9 0	2.0000)	/ Divide by		LF
	N	2.0000)	* Multiply by		
Depth of Excavation	W A9 0 (	2.0000	/ Divide by		LF
	N	0.5500)	N None		
	N	0.0000)	N None		
	N	0.0000)	* Multiply by		
2 Sides	N	2.0000			
<hr/>					
LNGSLA0 Long Slope Area					167.2727 SF

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. HANFORD: ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>					
NUMTRK0 Number of Trucks Reqd for Borrow					
Total Loading Output	N (	219.0000	*	Multiply by	LCY/HR
Convert to Days	N	8.0000	/	Divide by	HR/DAYS
Number of Cycles/Day/Truck	W CYCLES0	31.0000	B	(R) Divide by	CYCLES
Truck Capacity	N	15.0000)			LCY
<hr/>					
NUMTRK0 Number of Trucks Reqd for Borrow				4.0000 TRKS	
<hr/>					
QTYLLW0 LLW Volume					
Contaminated Soil	W ACSOIL0	14.0000	+	Add to	LCY
	N	0.0000			
<hr/>					
QTYLLW0 LLW Volume				14.0000 LCY	
<hr/>					
SAMPCT0 Bottom Area Closure Sample Qty					
	N (	0.0000	N	None	
Bottom Area	W A7 0 (	160.0000	+	Add to	SF
Long Slope Area	W LNGSLA0	167.2727	+	Add to	SF
Short Slope Area	W SHSHARE0	80.0000)	B	(R) Divide by	SF
Sample Frequency	N	6264.0000)	>	Greater of	SF
Minimum of 6 Samples	N	6.0000			
<hr/>					
SAMPCT0 Bottom Area Closure Sample Qty				6.0000 EA	
<hr/>					
SAMPML0 Regular LLW Samples - Mobile Lab					
	N (	0.0000	N	None	
Contaminated Soil	W ACSOIL0 (	14.0000)	B	(R) Divide by	LCY
	N	845.0000)	>	Greater of	LCY/HR
Minimum of 6 ea	N	6.0000			
<hr/>					
SAMPML0 Regular LLW Samples - Mobile Lab				6.0000 EA	
<hr/>					
SAMPNC0 Non-Contam Sample Quantity					
Non Contaminated Soil	W ABURDN0 (	7.9648)	<	Lesser of	LCY
	N	6.0000			
<hr/>					
SAMPNC0 Non-Contam Sample Quantity				6.0000 EA	
<hr/>					
SAMPQ10 QC Samples					
	N (0.0000	N	None	

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GW Protection Smpls (S3,M21,L60)	W A8 0 (0.0000	+ Add to		EA
BOTTOM AREA CLOSURE SAMPLE QTY.	W SAMPCR0	6.0000	+ Add to		EA
Non-Contam Sample Quantity	W SAMPNC0	6.0000	+ Add to		EA
Regular LLW Samples - Mobile Lab	W SAMPML0	6.0000)	* Multiply by		EA
5% QC SAMPLES	N	0.0500)	U Round Up		
MINIMUM QUANTITY, 3 EA	N	1.0000	> Greater of		
	N	3.0000			
SAMPQ10 QC Samples				3.0000	EA
SAMPTF0 Total Off-Site Samples					
Bottom Area Closure Sample Qty	W SAMPCR0	6.0000	+ Add to		EA
GW Protection Smpls (S3,M21,L60)	W A8 0	0.0000	+ Add to		EA
QC Samples	W SAMPQ10	3.0000			EA
SAMPTF0 Total Off-Site Samples				9.0000	EA
SAMPTO0 Total On-Site Samples					
Regular LLW Samples - Mobile Lab	W SAMPML0	6.0000	+ Add to		EA
Non-Contam Sample Quantity	W SAMPNC0	6.0000			EA
SAMPTO0 Total On-Site Samples				12.0000	EA
SHSHARE0 Short Slope Area					
Top Excavation Width	N (	0.0000	N None		
	N (	0.0000	N None		
	W A6 0 (	14.0000	* Multiply by		LF
		2.0000	- Subtract Next		
		3.0000	* Multiply by		
Depth of Excavation	W A9 0	2.0000)	/ Divide by		LF
	N (	2.0000)	* Multiply by		
Depth of Excavation	W A9 0 (	2.0000	/ Divide by		LF
	N	0.5500)	N None		
	N	0.0000)	N None		
	N	0.0000)	* Multiply by		
2 Sides	N	2.0000			
SHSHARE0 Short Slope Area				80.0000	SF
SITEPRO0 Site Perimeter					
Top Excavation Length	N (0.0000	N None		
Add 30 lf to each side	W A5 0 (26.0000	+ Add to		LF
	N	60.0000)	* Multiply by		LF

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. HANFORD: ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
2 sides	N	2.0000	+ Add to		
Top Excavation Width	W A6	0 (	14.0000	+ Add to	LF
Add 30 lf to each side	N	60.0000)	* Multiply by	LF	
2 sides	N	2.0000)	U Round Up		
	N	1.0000			
SITEPRO Site Perimeter				320.0000	LF
SPREAD0 Spread & Compact Soil Quantity					
Borrow to Haul	W BORROW0	13.0000			LCY
SPREAD0 Spread & Compact Soil Quantity				13.0000	LCY
TIMTOT0 Total Cycle Time for Borrow					
Loading Time for Borrow	N	0.0000	N None		
Truck Capacity	N	(	15.0000	/ Divide by	LCY
Total Loading Output	N	219.0000	+ Add to		LCY/HR
Hauling Time for Borrow	N	0.0000	N None		
Hauling Distance for Borrow	W ADISBR0	2.0000	/ Divide by		MILE
Hauling Speed for Borrow	N	30.0000	+ Add to		MPH
Dump Time	N	0.0250	+ Add to		HR
Return Time for Borrow	N	0.0000	N None		
Hauling Distance for Borrow	W ADISBR0	2.0000	/ Divide by		MILE
Return Speed for Borrow	N	40.0000)	* Multiply by		MPH
Convert to minutes	N	60.0000			MIN/HR
TIMTOT0 Total Cycle Time for Borrow				12.6096	MIN
TOTPPE0 Total PPE Sets					
Contaminated Duration	W CONDUR0	1.0000	* Multiply by		DAYS
2 Changes per day	N	2.0000	* Multiply by		
4 Workers	N	4.0000			
TOTPPE0 Total PPE Sets				8.0000	SETS
WASTON0 Tonnage of Waste					
Contaminated Soil	W ACSOIL0	14.0000	* Multiply by		LCY
	N	1.5000	+ Add to		TON/LCY
	N	0.0000			
WASTON0 Tonnage of Waste				21.0000	TONS

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REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
0. HANFORD: ER PROGRAM				
0 HANFORD: ER PROGRAM				1.0000 EA
01 Mobilization & Prep Work				1.0000 LS
01.04.05 Decon Fac. for Const. Equip/Veh.				24.0000 HR
PRODUCTIVITY	1.0000 HR /HR			
DURATION	24.0000 HR			
1 Laborer Group (3 ea.) D	24.0000 HR * Multiply by		3.0000	72.0000 HR
2 OPERATING ENGINEERS (1 ea) D	24.0000 HR * Multiply by		1.0000	24.0000 HR
3 TRK,HWY,4X4,F250,3/4T,8800 GVW D	24.0000 HR * Multiply by		1.0000	24.0000 HR
4 LOADER/BH, WH, 0.80 CY (0.6 M3), D	24.0000 HR * Multiply by		1.0000	24.0000 HR
5 Small Tools - 3 ea D	24.0000 HR * Multiply by		3.0000	72.0000 HR
01.04.11 Barricades (Install Temp. Fence)				
W SITEPRO	320.0000 LF		1.0000	320.0000 LF
PRODUCTIVITY	100.0000 LF /HR			
DURATION	3.2000 HR			
1 Laborer Group - 1 (2 ea.) D	3.2000 HR * Multiply by		2.0000	6.4000 HR
2 Truck Drivers (1 ea) D	3.2000 HR * Multiply by		1.0000	3.2000 HR
3 Trl,Hwy,4X2,F350,1T,10000 GVW D	3.2000 HR * Multiply by		1.0000	3.2000 HR
4 FLATBED, 8'x 12.0', W/SIDE RACKS D	3.2000 HR * Multiply by		1.0000	3.2000 HR
5 Small Tools - 2 ea D	3.2000 HR * Multiply by		2.0000	6.4000 HR
6 Materials/Supply Allowance for P	320.0000 LF * Multiply by		1.0000	320.0000 LF
01.06 Temp Relocatns/Roads/Struct/Util				
W QTYLLW0	14.0000 LCY		1.0000	14.0000 LCY
01.06.01 Roads (Site Road Maintenance)				
W QTYLLW0	14.0000 LCY		1.0000	14.0000 LCY
Site Road Maintenance	W QTYLLW0	14.0000 LCY * Multiply by	1.0000	14.0000 LCY
02 Monitoring, Sampling, & Analysis				1.0000 LS
02.08.05 Sub-Surface Soil (Field Screen-				
W DAYS 0	1.0000 DAY		8.0000	8.0000 HRS
1 ERC Environmental Tech. (.5 ea P	8.0000 HRS * Multiply by		0.5000	4.0000 HR
2 RADIATION CONTROL TECH. (1 ea) P	8.0000 HRS * Multiply by		1.0000	8.0000 HR
02.08.91 Excav. GW Prot. Sample Trenches				
W A8 0	0.0000 EA		3.0000	0.0000 EA

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02.08.92. Site Certificaton Sampling
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02.08.92. Site Certificaton Sampling		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>						
02.08.92 Site Certificaton Sampling						
	W SAMPCR0	6.0000 EA			1.0000	6.0000 EA
	PRODUCTIVITY	3.0000 EA /HR				
	DURATION	2.0000 HR				
1	ERC Sampler (1 ea)	D	2.0000 HR	* Multiply by	1.0000	2.0000 HR
2	RADIATION CONTROL TECH. (1 ea)	D	2.0000 HR	* Multiply by	1.0000	2.0000 HR
3	Materials/Supplies Allowance	P	6.0000 EA	* Multiply by	1.0000	6.0000 EA
02.	Analyze LLW Sample - Mobile Lab	W SAMPML0	6.0000 EA	M (R) Multiply by	1.0000	6.0000 EA
02.	Analyze Quality Control Samples	W SAMPQ10	3.0000 EA	M (R) Multiply by	1.0000	3.0000 EA
02.	Analyze Site Certification	W SAMPCR0	6.0000 EA	M (R) Multiply by	1.0000	6.0000 EA
02.	Groundwater Protection Samples	W A8 0	0.0000 EA	M (R) Multiply by	1.0000	0.0000 EA
02.	Non-Contam Sample Quantity	W SAMPNC0	6.0000 EA	M (R) Multiply by	1.0000	6.0000 EA
08	Solids Collection & Containment					1.0000 LS
08.01 Contaminated Soil Collection						1.0000 LS
08.01.02.01 Excavate/Load Contaminated Soil						
	W ACSOIL0	14.0000 LCY			1.0000	14.0000 LCY
	PRODUCTIVITY	52.0000 LCY/HR				
	DURATION	0.2692 HR				
1	Heavy Equipment Operator (1 ea)	D	0.2692 HR	* Multiply by	1.0000	0.2692 HR
2	HYD EXCAV, CRWLR, 90,200 LBS,	D	0.2692 HR	* Multiply by	1.0000	0.2692 HR
08.01.02.02 Provide Dust Suppression						
	W ACSOIL0	14.0000 LCY			1.0000	14.0000 LCY
	PRODUCTIVITY	52.0000 LCY/HR				
	DURATION	0.2692 HR				
1	Heavy Truck Driver	D	0.2692 HR	* Multiply by	1.0000	0.2692 HR
2	Trl,Wtr,Off-Hwy, 6000GAL,Cat621E	D	0.2692 HR	* Multiply by	1.0000	0.2692 HR
08.01.03 Hauling (To Queue Area)						
	W CONDUR0	1.0000 DAY			8.0000	8.0000 HRS
1	Truck Drivers (3 ea)	P	8.0000 HRS	* Multiply by	3.0000	24.0000 HR
2	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE	P	8.0000 HRS	* Multiply by	3.0000	24.0000 HR
3	20 Ton Tilt Trailer	P	8.0000 HRS	* Multiply by	3.0000	24.0000 HR
08.01.04.01 Excavate and Stockpile						
	W ABURDN0	7.9648 LCY			1.0000	7.9648 LCY
	PRODUCTIVITY	52.0000 LCY/HR				
	DURATION	0.1532 HR				

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SETTINGS PAGE 10

08.01.04.01. Excavate and Stockpile		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
1 Heavy Equipment Operator (1 ea)		D	0.1532 HR	* Multiply by	1.0000	0.1532 HR
2 HYD EXCAV, CRWLR, 90,200 LBS,		D	0.1532 HR	* Multiply by	1.0000	0.1532 HR
3 Heavy Truck Driver (2 ea)		D	0.1532 HR	* Multiply by	2.0000	0.3063 HR
4 Trk,Off-Hwy,R-Dump, 15-19CY, 25T		D	0.1532 HR	* Multiply by	2.0000	0.3063 HR
08.01.04.02 Provide Dust Suppression		W ABURDN0	7.9648 LCY		1.0000	7.9648 LCY
PRODUCTIVITY			52.0000 LCY/HR			
DURATION			0.1532 HR			
1 Truck Driver (1 ea)		D	0.1532 HR	* Multiply by	1.0000	0.1532 HR
2 Trk,Wtr,Off-Hwy, 6000GAL,CAT621E		D	0.1532 HR	* Multiply by	1.0000	0.1532 HR
3 Material Cost for Soil Sement		W ABURDN0	7.9648 LCY	* Multiply by	1.0000	7.9648 LCY
08.01.91.01 Low Activity Containers		W CONDUR0	1.0000 DAY		8.0000	8.0000 HRS
PRODUCTIVITY			1.0000 HRS/HR			
DURATION			8.0000 HR			
01	Radiation Control Tech. (3 ea)	P	8.0000 HRS	* Multiply by	3.0000	24.0000 HR
08.01.91.02 Decontaminate Containers		W CONDUR0	1.0000 DAY		8.0000	8.0000 HR
PRODUCTIVITY			1.0000 HR /HR			
DURATION			8.0000 HR			
1	Laborer (3 ea)	P	8.0000 HR	* Multiply by	3.0000	24.0000 S1
2	WATER BLASTR, COLD WTR, 2500 PSI	P	8.0000 HR	* Multiply by	1.0000	8.0000 HR
3	Small Tools - 3 ea	P	8.0000 HR	* Multiply by	3.0000	24.0000 HR
08.01.92 Queue Area Operations		W CONDUR0	1.0000 DAY		8.0000	8.0000 HRS
PRODUCTIVITY			1.0000 HRS/HR			
DURATION			8.0000 HR			
1	Laborers (2 ea)	P	8.0000 HRS	* Multiply by	2.0000	16.0000 HR
2	Radiation Control Tech. (.5 ea)	P	8.0000 HRS	* Multiply by	0.5000	4.0000 HR
3	Container liners	W CONTRK0	2.0000 LOA	* Multiply by	1.0000	2.0000 EA
08.01.93 Radiation Control Tech. Support		W DAYS 0	1.0000 DAY		8.0000	8.0000 HRS
PRODUCTIVITY			1.0000 HRS/HR			
DURATION			8.0000 HR			
1	Radiation Control Tech. (1.5 ea)	P	8.0000 HRS	* Multiply by	1.5000	12.0000 HR

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U.S. Army Corps of Engineers
PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)
08.01.94. Site Lighting
** LINK LISTING **

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SETTINGS PAGE 11

REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
08. Allowance for Mobile Site	W DAYS 0	1.0000 DAY B (R) Divide by	30.0000	0.0000 MO
08. ERC PPE (Subcontractor Supplied)	W TOTPPE0	8.0000 SET * Multiply by	1.0000	8.0000 SET
08. S/C PPE (Subcontractor Supplied)	W TOTPPE0	8.0000 SET * Multiply by	1.0000	8.0000 SET
08.01.95.02 Laundry Services				0.0000 LS
	PRODUCTIVITY	1.0000 LS /HR		
	DURATION	0.0000 HR		
Regulated PPE Laundry	W DAYS 0	1.0000 DAY M (R) Multiply by	8.0000	8.0000 HR
Mask Cleaning Services	W DAYS 0	1.0000 DAY B (R) Divide by	30.0000	0.0000 MO
18 Disposal (Other than Commercial)				1.0000 LS
18.21 Trans. to Storage/Disp. Facility	W WASTON0	21.0000 TON	1.0000	21.0000 LS
ERDF Transportation Costs	W ERDFQTO	0.0000 TON * Multiply by	1.0000	0.0000 TON
18.22 ERDF Disposal Costs	W WASTON0	21.0000 TON	1.0000	21.0000 LS
Disposal Facility Fees & Taxes	W ERDFQTO	0.0000 TON * Multiply by	1.0000	0.0000 TON
20 Site Restoration				1.0000 LS
20.01.03 Load/Haul Borrow (Backfill)	W SPREAD0	13.0000 LCY	1.0000	13.0000 LCY
	PRODUCTIVITY	219.0000 LCY/HR		
	DURATION	0.0594 HR		
1 Heavy Equipment Operator	D	0.0594 HR * Multiply by	1.0000	0.0594 HR
2 Ldr,FE, WH, 4.50 CY, Artic, 966E	D	0.0594 HR * Multiply by	1.0000	0.0594 HR
3 Heavy Truck Driver	W DURBOR0	0.2374 HRS * Multiply by	1.0000	0.2374 HR
4 Trk,Off-Hwy,R-Dump, 15-19CY, 25T	W DURBOR0	0.2374 HRS * Multiply by	1.0000	0.2374 HR
20.01.06 Spreading (Spread/Comp. Borrow)	W SPREAD0	13.0000 LCY	1.0000	13.0000 LCY
	PRODUCTIVITY	219.0000 LCY/HR		
	DURATION	0.0594 HR		
1 Heavy Truck Driver (1 ea)	D	0.0594 HR * Multiply by	1.0000	0.0594 HR
2 Trk,Wtr,Off-Hwy, 6000GAL,Cat621E	D	0.0594 HR * Multiply by	1.0000	0.0594 HR
3 Heavy Equipment Operator (1 ea)	D	0.0594 HR * Multiply by	1.0000	0.0594 HR
4 DOZER, CRWLR, 251-300 HP	D	0.0594 HR * Multiply by	1.0000	0.0594 HR

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U.S. Army Corps of Engineers
PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)
20.04.01. Mech. Seeding with Fertilizer
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SETTINGS PAGE 12

20.04.01. Mech. Seeding with Fertilizer REFERENCE		REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>					
20.04.01 Mech. Seeding with Fertilizer					
	W AREAST0	6364.0000 SF		43560.0000	0.1461 ACR
	PRODUCTIVITY	1.0000 ACR/HR			
	DURATION	0.1461 HR			
1	Operating Engineers (1 ea)	D	0.1461 HR * Multiply by	1.0000	0.1461 HR
2	4 Wheel Drive Tractor (Farm)	D	0.1461 HR * Multiply by	1.0000	0.1461 HR
3	Mulch Spreader (1 ea)	D	0.1461 HR * Multiply by	1.0000	0.1461 HR
4	Tiller (1 ea)	D	0.1461 HR * Multiply by	1.0000	0.1461 HR
5	Primary Seeder (1 ea)	D	0.1461 HR * Multiply by	1.0000	0.1461 HR
6	Seed, Fertilizer and Mulch	P	0.1461 ACR * Multiply by	1.0000	0.1461 ACR
20.04.04 Shrubs/Trees/Groundcover					
	W AREAST0	6364.0000 SF		43560.0000	0.1461 ACR
	PRODUCTIVITY	1.0000 ACR/HR			
	DURATION	0.1461 HR			
Laborers (6 ea)	D	0.1461 HR * Multiply by	6.0000	0.8766 HR	
Grade 23 Supervision (1 EA)	D	0.1461 HR * Multiply by	1.0000	0.1461 HR	
Trk,Hwy, 8,800GVW,4X4, 3/4T-Pkup	D	0.1461 HR * Multiply by	1.0000	0.1461 HR	
Small tools (6 ea)	D	0.1461 HR * Multiply by	6.0000	0.8766 HR	
Tubling Cost	W AREAST0	6364.0000 SF / Divide by	43560.0000	0.1461 ACR	
20.04.91 Irrigation					
	W AREAST0	6364.0000 SF		43560.0000	0.1461 ACR
	PRODUCTIVITY	0.0610 ACR/HR			
	DURATION	2.3951 HR			
1	Truck Driver	D	2.3951 HR * Multiply by	1.0000	2.3950 HR
2	Trk,Hwy, 43,000 GVW, 6X4, 3 Axle	D	2.3951 HR * Multiply by	1.0000	2.3950 HR
3	Trlr,Water Tanker,4000Gal (1 ea)	D	2.3951 HR * Multiply by	1.0000	2.3950 HR
5	2" Dist. lines w/ Sprinkler Hds.	P	0.1461 ACR * Multiply by	1.0000	0.1461 ACR
21 Demobilization				1.0000 LS	
21.01. 5 Remove Decontamination Area				16.0000 HRS	
Laborers (3 ea)	P	16.0000 HRS * Multiply by	3.0000	48.0000 HR	
Small Tools (3 ea)	P	16.0000 HRS * Multiply by	3.0000	48.0000 HR	
LOADER/BH, WH, 0.80 CY (0.6 M3),	P	16.0000 HRS * Multiply by	1.0000	16.0000 HR	
Operating Engineers (1 ea)	P	16.0000 HRS * Multiply by	1.0000	16.0000 HR	
Trk,Off-Hwy,R-Dump, 15-19CY, 25T	P	16.0000 HRS * Multiply by	1.0000	16.0000 HR	
Truck Driver (1 ea)	P	16.0000 HRS * Multiply by	1.0000	16.0000 HR	
21.01.11 Barricades (Remove Temp. Fence)					
	W SITEPRO	320.0000 LF		1.0000	320.0000 LF

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PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)
21.01.11. Barricades (Remove Temp. Fence)
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SETTINGS PAGE 13

21.01.11. Barricades (Remove Temp. Fence)		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM			
1	Laborers (2 ea)	D	1.6000	HR	*	Multiply by	2.0000	3.2000	HR
2	Small Tools (2 ea)	D	1.6000	HR	*	Multiply by	2.0000	3.2000	HR
3	Truck Drivers (1 ea)	D	1.6000	HR	*	Multiply by	1.0000	1.6000	HR
4	Trk,Hwy,10,000GVW,4X2, 1T-Pickup	D	1.6000	HR	*	Multiply by	1.0000	1.6000	HR
5	FLATBED, 8'x 12.0', W/SIDE RACKS	D	1.6000	HR	*	Multiply by	1.0000	1.6000	HR
21.01.25 Roads & Parking (Scarify Roads)						0.5000	HRS		
Operating Engineers (1 ea)	P	0.5000	HRS	*	Multiply by	1.0000	0.5000	HR	
Grader,Motor, Artic, Cat 12-G	P	0.5000	HRS	*	Multiply by	1.0000	0.5000	HR	
5 Shank Ripper/Scarifyer (1 ea)	P	0.5000	HRS	*	Multiply by	1.0000	0.5000	HR	
21.01.91 Misc. Cleanup Allowance						8.0000	HRS		
1	Laborers (2 ea)	P	8.0000	HRS	*	Multiply by	2.0000	16.0000	HR
2	Small Tools (2 ea)	P	8.0000	HRS	*	Multiply by	2.0000	16.0000	HR
3	Truck Drivers (1 ea)	P	8.0000	HRS	*	Multiply by	1.0000	8.0000	HR
4	Trk,Hwy,10,000GVW,4X2, 1T-Pickup	P	8.0000	HRS	*	Multiply by	1.0000	8.0000	HR
5	FLATBED, 8'x 12.0', W/SIDE RACKS	P	8.0000	HRS	*	Multiply by	1.0000	8.0000	HR
70.	ERC Cost/Scheduling Engineer	W DAYPRO0	14.0000	DAY	*	Multiply by	2.6900	37.6600	HR
70.	ERC Design Engineer	W DAYPRO0	14.0000	DAY	*	Multiply by	1.7200	24.0800	HR
70.	ERC Project Engineer	W DAYPRO0	14.0000	DAY	*	Multiply by	2.2700	31.7800	HR
70.	ERC Environmental Compliance	W DAYPRO0	14.0000	DAY	*	Multiply by	0.0000	0.0000	HR
70.	ERC Procurement	W DAYPRO0	14.0000	DAY	*	Multiply by	1.6500	23.1000	HR
70.	ERC Project Management	W DAYPRO0	14.0000	DAY	*	Multiply by	3.3400	46.7600	HR
70.	ERC Quality Assurance	W DAYPRO0	14.0000	DAY	*	Multiply by	0.5400	7.5600	HR
70.	ERC Field Support	W DAYPRO0	14.0000	DAY	*	Multiply by	8.5200	119.2800	HR
70.	ERC Administrative Services	W DAYPRO0	14.0000	DAY	*	Multiply by	1.4100	19.7400	HR
70.	ERC Rad Con Engineer	W DAYPRO0	14.0000	DAY	*	Multiply by	0.4600	6.4400	HR
70.	ERC Safety Engineer	W DAYPRO0	14.0000	DAY	*	Multiply by	1.4200	19.8800	HR
XXX.	Non-Contaminated Soil	W A1 0	187.0000	BCF	*	Multiply by	1.0000	187.0000	BCF
XXX.	Contaminated Soil	W A3 0	320.0000	BCF	*	Multiply by	1.0000	320.0000	BCF
XXX.	Top Excavation Length	W A5 0	26.0000	LF	*	Multiply by	1.0000	26.0000	LF
XXX.	Top Excavation Width	W A6 0	14.0000	LF	*	Multiply by	1.0000	14.0000	LF
XXX.	Bottom Area	W A7 0	160.0000	SF	*	Multiply by	1.0000	160.0000	SF
XXX.	Hauling Distance for Borrow	W ADISBR0	2.0000	MIL	*	Multiply by	1.0000	2.0000	MI
XXX.	Groundwater Protection Samples	W A8 0	0.0000	EA	*	Multiply by	1.0000	0.0000	EA
XXX.	Depth of Excavation	W A9 0	2.0000	LF	*	Multiply by	1.0000	2.0000	LF
XXX.	Include ERDF Cost? 1=yes 0=no	W A10 0	0.0000	YES	*	Multiply by	1.0000	0.0000	Y/N
XXX.	Non-Contaminated Soil - Reduced	W ABURDN0	7.9648	LCY	*	Multiply by	1.0000	7.9648	LCY
XXX.	Contaminated Soil	W ACSOIL0	14.0000	LCY	*	Multiply by	1.0000	14.0000	LCY
XXX.	Site Area	W AREAST0	6364.0000	SF	*	Multiply by	1.0000	6364.0000	SF
XXX.	Borrow	W BORROW0	13.0000	LCY	*	Multiply by	1.0000	13.0000	LCY
XXX.	Total Project Duration	W DAYPRO0	14.0000	DAY	*	Multiply by	1.0000	14.0000	DAY

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U.S. Army Corps of Engineers
PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)
XXX.YY. Additional Quantities
** LINK LISTING **

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XXX.YY. Additional Quantities	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
XXX. Total Excavation Duration	W DAYS 0	1.0000 DAY *	Multiply by	1.0000	1.0000 DAY
XXX. Low Level Waste (LLW) Volume	W QTYLLW0	14.0000 LCY *	Multiply by	1.0000	14.0000 LCY
XXX. Tonnage of LLW	W WASTON0	21.0000 TON *	Multiply by	1.0000	21.0000 TON
XXX. Duration of In-Situ Monitoring	W SAMPHR0	0.0000 HR *	Multiply by	1.0000	0.0000 HR
XXX. Regular LLW Samples - Mobile Lab	W SAMPML0	6.0000 EA *	Multiply by	1.0000	6.0000 EA
XXX. Bottom Area Closure Sample Qty.	W SAMPCR0	6.0000 EA *	Multiply by	1.0000	6.0000 EA
XXX. QC Sample Quantity and Analysis	W SAMPQ10	3.0000 EA *	Multiply by	1.0000	3.0000 EA
XXX. Non-Contaminated Sample Quantity	W SAMPNC0	6.0000 EA *	Multiply by	1.0000	6.0000 EA
XXX. Site Perimeter	W SITEPRO	320.0000 LF *	Multiply by	1.0000	320.0000 LF
XXX. Spread/Compact Soil Quantity	W SPREAD0	13.0000 LCY *	Multiply by	1.0000	13.0000 LCY
XXX. Total On-Site Samples	W SAMPTO0	12.0000 EA *	Multiply by	1.0000	12.0000 EA
XXX. Total Off-Site Samples	W SAMPTF0	9.0000 EA *	Multiply by	1.0000	9.0000 EA

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U.S. Army Corps of Engineers
PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)
01. Mobilization & Prep Work

TIME 11:18:18
DETAIL PAGE 1

01.01. Mobilize Equipment & Facilities	QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>									
01. Mobilization & Prep Work									
01.01. Mobilize Equipment & Facilities									
Note:									
1.	Mob and demob will be one or two times per reactor area or 300 area depending on size. Estimates for mob and demob are completed apart from the waste site MCACES estimates on an EXCEL model, and will reflect the equipment and facility requirements called for in the models.								
2.	Mobilization of facilities such as office trailers, etc, (i.e. General Contractor mobilization) are excluded.								
TOTAL Mobilize Equipment & Facilities				0	0	0	0	0	0
01.04. Setup/Construct Temp Facilities									
01.04.05. Decon Fac. for Const. Equip/Veh. (Construct Decon Areas)									
Notes:									
The duration for this activity is 24 hours.									
BLT S1 Laborer Group (3 ea.)	72.00	HR	11786	29.73 2,141	0.00 0	0.00 0	0.00 0	29.73 2,141	29.73
BLT S1 OPERATING ENGINEERS (1 ea)	24.00	HR	11788	33.74 810	0.00 0	0.00 0	0.00 0	33.74 810	33.74
FPC S1 TRK,HWY,4X4,F250,3/4T,8800 GVW 4X4 3/4 TON PICK-UP - 1 ea	24.00	HR	T50FO004	0.00 0	7.66 184	0.00 0	0.00 0	7.66 184	7.66
GEN S1 LOADER/BH, WH, 0.80 CY (0.6 M3), F/E BKT 30" (762 MM) DIPPER - 1 ea.	24.00	HR	L50Z4640	0.00 0	12.72 305	0.00 0	0.00 0	12.72 305	12.72
FPC S1 Small Tools - 3 ea	72.00	HR	XMIIXX020	0.00 0	1.57 113	0.00 0	0.00 0	1.57 113	1.57
M USR S1 Construction Materials/Supplies Allowance	1.00	LS		0.00 0	0.00 0	2160.00 2,160	0.00 0	2160.00 2,160	2160.00
M USR S1 Allowance for Tank Assume 1000 gal plastic tank for water collection	1.00	LS		0.00 0	0.00 0	1620.00 1,620	0.00 0	1620.00 1,620	1620.00
TOTAL Decon Fac. for Const. Equip/Veh.	24.00	HR		2,950	602	3,780	0	7,333	305.53

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Trench Model (Small) - Rev. 1 (TRSM01)
01. Mobilization & Prep Work

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DETAIL PAGE 2

01.04. Setup/Construct Temp Facilities	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
01.04.11. Barricades (Install Temp. Fence)							
Notes:							
Install construction barricade fence. The barricade is assumed to be located 30 ft. from the top of excavation.							
Output:							
Production rate = 100 LF/HR							
Material supply allowance is \$1.75/LF							
BLT S1 Laborer Group - 1 (2 ea.)	6.40 HR 11786	29.73 190	0.00 0	0.00 0	0.00 0	29.73 190	29.73
BLT S1 Truck Drivers (1 ea)	3.20 HR 11792	34.51 110	0.00 0	0.00 0	0.00 0	34.51 110	34.51
FPC S1 Trl,Hwy,4X2,F350,1T,10000 GVW 4X2 1-TON PICK-UP,10000 GVW - 1 ea	3.20 HR T50FO005	0.00 0	7.88 25	0.00 0	0.00 0	7.88 25	7.88
MAP S1 FLATBED, 8'x 12.0', W/SIDE RACKS (ADD TRUCK) - 1 ea.	3.20 HR T40KF014	0.00 0	0.70 2	0.00 0	0.00 0	0.70 2	0.70
FPC S1 Small Tools - 2 ea	6.40 HR XMIXX020	0.00 0	1.57 10	0.00 0	0.00 0	1.57 10	1.57
M USR S1 Materials/Supply Allowance for Fence	320.00 LF	0.00 0	0.00 0	1.89 605	0.00 0	1.89 605	1.89
TOTAL Barricades (Install Temp. Fence)	320.00 LF	301	38	605	0	943	2.95

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Trench Model (Small) - Rev. 1 (TRSM01)
01. Mobilization & Prep Work

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DETAIL PAGE 3

01.04. Setup/Construct Temp Facilities	QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
01.04.91. Waste Site Survey									
USR S1 Allowance for Site Survey	1.00	LS		0.00 0	0.00 0	0.00 0	1600.00 1,600	1600.00 1,600	1600.00 1,600
TOTAL Waste Site Survey				0	0	0	1,600	1,600	
TOTAL Setup/Construct Temp Facilities				3,251	640	4,385	1,600	9,876	

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Trench Model (Small) - Rev. 1 (TRSM01)
01. Mobilization & Prep Work

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DETAIL PAGE 4

01.06. Temp Relocatns/Roads/Struct/Util	QUANTY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
01.06. Temp Relocatns/Roads/Struct/Util							
Notes:							
The unit rate is an allowance created using a detailed estimate on sites in the 100-BC Area, and by pro-rating to a cost/LCY of contaminated soil.							
This cost is for in-situ gravel access roads, and for asphalt repairs.							
01.06.01. Roads (Site Road Maintenance)							
Notes:							
The unit rate of \$.58/LCY is from a separate EXCEL spreadsheet (Ref. EAR#327, ROADMT5.XLS). Road length is assumed to be 625 LF. Asphalt patching is assumed at 1 time per 300 SY of road. Dust suppression is assumed to be 1 pass.							
USR S1 Site Road Maintenance	14.00 LCY	0.00	0.00	0.00	0.58	0.58	
		0	0	0	8	8	
TOTAL Roads (Site Road Maintenance)	14.00 LCY	0	0	0	8	8	0.58
		-----	-----	-----	-----	-----	
TOTAL Temp Relocatns/Roads/Struct/Util	14.00 LCY	0	0	0	8	8	0.58
		-----	-----	-----	-----	-----	
TOTAL Mobilization & Prep Work		3,251	640	4,385	1,608	9,884	

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PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)
02. Monitoring, Sampling, & Analysis

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DETAIL PAGE 5

02.08. Sampling Rad Contaminated Media	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
02. Monitoring, Sampling, & Analysis							
02.08. Sampling Rad Contaminated Media							
(Radiation Monitoring)							
02.08.05. Sub-Surface Soil (Field Screening/Take Samples)							
Notes:							
Duration for this activity is equal to the excavation/demolition duration.							
It is assumed that the Rad. Control Technician will be present during all							
excavation/demolition activities.							
ERC AB ERC Environmental Tech. (.5 ea	4.00 HR 31000	67.63 271	0.00 0	0.00 0	0.00 0	67.63 271	67.63
HAM AB RADIATION CONTROL TECH. (1 ea)	8.00 HR 10T17	57.98 464	0.00 0	0.00 0	0.00 0	57.98 464	57.98
TOTAL Sub-Surface Soil (Field Screen-	8.00 HRS	734	0	0	0	734	91.79

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Trench Model (Small) - Rev. 1 (TRSM01)
02. Monitoring, Sampling, & Analysis

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02.08. Sampling Rad Contaminated Media	QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>									
02.08.91. Excav. GW Prot. Sample Trenches									
Note: Number of trenches are yet to be determined by the project (for groundwater protection samples). Trench cost is \$750/ea. Since the projects have not decided if this work is needed it is set at \$0 for now.									
TOTAL Excav. GW Prot. Sample Trenches				0	0	0	0	0	0
02.08.92. Site Certificaton Sampling									
Note: Activity includes the collection of certification samples for an area equal to the bottom area plus all side slopes.									
Sample Frequency = 1 sample/6264 SF (Minimum of 6) Production Rate = 3 samples/crew hr.									
ERC AB ERC Sampler (1 ea)	2.00	HR	31751	43.72 87	0.00 0	0.00 0	0.00 0	43.72 87	43.72
HAM AB RADIATION CONTROL TECH. (1 ea)	2.00	HR	10T17	57.98 116	0.00 0	0.00 0	0.00 0	57.98 116	57.98
M USR AB Materials/Supplies Allowance	6.00	EA		0.00 0	0.00 0	5.40 32	0.00 0	5.40 32	5.40
TOTAL Site Certificaton Sampling	6.00	EA		203	0	32	0	236	39.30
TOTAL Sampling Rad Contaminated Media				938	0	32	0	970	

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PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)
02. Monitoring, Sampling, & Analysis

TIME 11:18:18
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02.10. Radioactive Waste Analysis	QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>									
02.10. Radioactive Waste Analysis									
02.10.05. Rad. Anal. Veg./Sediment/Soil (Sample Analytical Costs, Mobile lab & Offsite)									
Notes:									
1. LLW Samples - Sample frequency is 1 per 845 LCY with a minimum of 6. Cost per sample is \$1,100/Sample.									
2. QC Samples - 5% of all samples, minimum of 3 ea. Cost is \$2,000/ea.									
3. Site Certification Samples - Sample Frequency is 1 per 6264 SF of exposed area with a min. of 6 ea. Exposed area includes bottom area and all side slopes. Cost is \$2,000/ea.									
4. Groundwater Protection Samples - These are retained in the model but set to show no cost until it is decided if this is required. Sample cost is \$2,000/ea.									
5. Non-Contam. Samples - Sample frequency is total of 6 samples per site except for sites less than 6 LCY where it will be 1 sample per LCY. Sample cost is \$1,100/ea.									
USR AB Analyze LLW Sample - Mobile Lab Assume 1 sample per 845 LCYs of Contaminated Soil. Minimum of 6 sample.	6.00	EA		0.00	0.00	0.00	1100.00	1100.00	
				0	0	0	6,600	6,600	1100.00
USR AB Analyze Quality Control Samples - Off-Site Lab Assume 5% of the sum of all other samples. Minimum of 3 sample.	3.00	EA		0.00	0.00	0.00	2000.00	2000.00	
				0	0	0	6,000	6,000	2000.00
USR AB Analyze Site Certification Samples - On-Site Lab Assume 1 sample per 6,264 sq ft of bottom area plus side slope areas. Minimum of 6 samples.	6.00	EA		0.00	0.00	0.00	2000.00	2000.00	
				0	0	0	12,000	12,000	2000.00
USR AB Non-Contam Sample Quantity Assume 6 samples per site except for sites less than 6 LCY where it will be 1 sample per LCY.	6.00	EA		0.00	0.00	0.00	1100.00	1100.00	
				0	0	0	6,600	6,600	1100.00
TOTAL Rad. Anal. Veg./Sediment/Soil				0	0	0	31,200	31,200	
TOTAL Radioactive Waste Analysis				0	0	0	31,200	31,200	
TOTAL Monitoring, Sampling, & Analysis				938	0	32	31,200	32,170	

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PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)
08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08. Solids Collection & Containment							
08.01. Contaminated Soil Collection							
(Excavate/Haul)							
08.01.02. Excavation (Contaminated Soil)							
08.01.02.01. Excavate/Load Contaminated Soil							
Work to be Performed:							
Excavate contaminated soil/buried waste by hydraulic excavator.							
Assumptions:							
1. A 15% swell factor has been applied to bank soil volume.							
2. Excavation rate is 52 LCY/HR (416 LCY/DAY)							
L USR S1 Heavy Equipment Operator (1 ea) - 1 ea	0.27 HR	30.82 8	0.00 0	0.00 0	0.00 0	30.82 8	30.82
EP S1 HYD EXCAV, CRWLR, 90,200 LBS, 2.38 CY BKT - 1 ea.	0.27 HR H25HI011	0.00 0	88.72 24	0.00 0	0.00 0	88.72 24	88.72
TOTAL Excavate/Load Contaminated Soil	14.00 LCY	----- 8	----- 24	----- 0	----- 0	----- 32	----- 2.30

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08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>									
08.01.02.02. Provide Dust Suppression									
Work to be Performed: Suppress dust by water spray.									
Output: Duration is equal to the duration of contaminated soil excavation.									
BLT S1 Heavy Truck Driver - 1 ea	0.27	HR	11792	34.51 9	0.00 0	0.00 0	0.00 0	34.51 9	34.51
FPC S1 Trl,Wtr,Off-Hwy, 6000GAL,Cat621E 6000 GALLON WITH CAT 621E TRAC - 1 ea	0.27	HR	T60KI002	0.00 0	60.15 16	0.00 0	0.00 0	60.15 16	60.15
TOTAL Provide Dust Suppression	14.00	LCY		----- 9	----- 16	----- 0	----- 0	----- 25	1.82
TOTAL Excavation (Contaminated Soil)				----- 18	----- 40	----- 0	----- 0	----- 58	

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08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08.01.03. Hauling (To Queue Area)							
Note: Haulage of contaminated soils and demolition debris from the excavation to the Queue area. Assume 3 trucks for the operation. Duration is equal to time when contaminated soil and debris are being excavated.							
BLT S1 Truck Drivers (3 ea)	24.00 HR 11792	34.51 828	0.00 0	0.00 0	0.00 0	34.51 828	34.51
MIL S1 TRK,HWY, 46,000 GVW, 6X4, 3 AXLE (3 ea.)	24.00 HR T50PE002	0.00 0	36.62 879	0.00 0	0.00 0	36.62 879	36.62
USR S1 20 Ton Tilt Trailer (For trucks to haul ERDF containers) (3 ea)	24.00 HR YA1	0.00 0	3.28 79	0.00 0	0.00 0	3.28 79	3.28
TOTAL Hauling (To Queue Area)	8.00 HRS	----- 828	----- 958	----- 0	----- 0	1,786	223.23

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08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08.01.04. Stockpiling (Exc. Overburden)							
08.01.04.01. Excavate and Stockpile							
Work to be Performed:							
Excavate overburden by hydraulic excavator and haul to stockpile. Assume 2 ea, 15 cy dump trucks per excavator.							
Production Rate:							
52 loose cu yd per crew hour							
BLT S1 Heavy Equipment Operator (1 ea) - 1 ea.	0.15 HR 11788	33.74 5	0.00 0	0.00 0	0.00 0	33.74 5	33.74
EP S1 HYD EXCAV, CRWLR, 90,200 LBS, 2.38 CY BKT - 1 ea.	0.15 HR H25HI011	0.00 0	88.72 14	0.00 0	0.00 0	88.72 14	88.72
BLT S1 Heavy Truck Driver (2 ea)	0.31 HR 11792	34.51 11	0.00 0	0.00 0	0.00 0	34.51 11	34.51
MIL S1 Trk,Off-Hwy,R-Dump, 15-19CY, 25T (2 ea)	0.31 HR T55DJ002	0.00 0	34.06 10	0.00 0	0.00 0	34.06 10	34.06
TOTAL Excavate and Stockpile	7.96 LCY	16	24	0	0	40	4.99

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08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08.01.91. Frisking Tent Operations (Survey & Decon Trucks and Containers)							
08.01.91.01. Low Activity Containers (Frisk Containers/Trucks)							
<p>Note: Frisking tent operation is assumed to occur only during the excavation of the contaminated material portion of the work scope.</p>							
USR AB Radiation Control Tech. (3 ea)	24.00 HR	48.46 1,163	0.00 0	0.00 0	0.00 0	48.46 1,163	48.46
TOTAL Low Activity Containers	8.00 HRS	----- 1,163	0	0	0	1,163	145.38

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08. Solids Collection & Containment

TIME 11:18:18
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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08.01.91.02. Decontaminate Containers (Prepare Containers for Shipment)							
Work to be Performed: Close liner, secure tarp and spray/decon waste containers, if contaminated, prior to transport to disposal facility. Water is recycled for contaminated dust suppression							
Crew and Equipment: Fixed Price Contractor: 3 ea. Laborers Equipment: 1 ea. Pressure washer and 1 ea. 1,000 gal. portable water tank (cost included in construction cost).							
Output: Duration is equal to the duration of the excavation/haul activities in the contaminated zone.							
BLT S1 Laborer (3 ea)	24.00 S1 11786	29.73 714	0.00 0	0.00 0	0.00 0	29.73 714	29.73
EP S1 WATER BLASTR, COLD WTR, 2500 PSI , 4 GPM - 1 ea.	8.00 HR W25SD005	0.00 0	3.87 31	0.00 0	0.00 0	3.87 31	3.87
FPC S1 Small Tools - 3 ea	24.00 HR XMIXX020	0.00 0	1.57 38	0.00 0	0.00 0	1.57 38	1.57
TOTAL Decontaminate Containers	8.00 HR	714	69	0	0	782	97.77
TOTAL Frisking Tent Operations		1,877	69	0	0	1,945	

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08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08.01.92. Queue Area Operations							
Note: Includes installation of liners into containers and misc. activities necessary in queue area for the duration of the contaminated material excavation. Each container receives a liner. The quantity of container liners is based on the number of containers to be moved calculated at 12.87 LCY per container. Duration is the timeframe when contaminated soil and demolition waste are being excavated and hauled.							
BLT S1 Laborers (2 ea)	16.00 HR 11786	29.73 476	0.00 0	0.00 0	0.00 0	29.73 476	29.73
HAM AB Radiation Control Tech. (.5 ea)	4.00 HR 10T17	57.98 232	0.00 0	0.00 0	0.00 0	57.98 232	57.98
USR S1 Container liners	2.00 EA	0.00 0	0.00 0	24.31 49	0.00 0	24.31 49	24.31
TOTAL Queue Area Operations	8.00 HRS	708	0	49	0	756	94.53

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08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08.01.93. Radiation Control Tech. Support							
Notes:							
Crew and Equipment:							
Rad Control Techs. - 1.5 ea.							
Duration:							
Total Excavation Duration							
HAM AB Radiation Control Tech. (1.5 ea)	12.00 HR 10T17	57.98 696	0.00 0	0.00 0	0.00 0	57.98 696	57.98
TOTAL Radiation Control Tech. Support	8.00 HRS	696	0	0	0	696	86.97

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08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08.01.94. Site Lighting Assumption is that no site lighting will be necessary since all work is assumed to be during daylight hours.		0	0	0	0	0	0
TOTAL Site Lighting							

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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08.01.95. PPE (Personal Prot. Clothing)							
08.01.95.01. PPE (Subcontractor Supplied)							
Note: Disposable PPE @ \$9.50/set (excluding sales tax), 2 changes per day for 4 ERC personnel and 4 subcontractor personnel for the duration of contaminated material excavation.							
USR S1 ERC PPE (Subcontractor Supplied)	8.00 SET	0.00 0	0.00 0	10.26 82	0.00 0	10.26 82	10.26 10.26
USR S1 S/C PPE (Subcontractor Supplied)	8.00 SET	0.00 0	0.00 0	10.26 82	0.00 0	10.26 82	10.26 10.26
TOTAL PPE (Subcontractor Supplied)		0	0	164	0	164	

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08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
08.01.95.02. Laundry Services (No Cost item)							
Note:							
This item has been deactivated. It remains in the model for possible future use. Rates should be reviewed and updated.							
TOTAL Laundry Services		0	0	0	0	0	0
		-----	-----	-----	-----	-----	-----
TOTAL PPE (Personal Prot. Clothing)		0	0	164	0	164	

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08. Solids Collection & Containment

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08.01. Contaminated Soil Collection	QUANTY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
08.01.96. Personnel Training							
Note: This account is an allowance for RAD personnel training. It is assumed that multiple sites within an Operable Unit (OU) will be remediated by the same general contractor. Personnel training may not be required for every site within an OU. However, an allowance is being made for personnel changes during the life of the contract.							
USR S1 8-Hour Supervisor Course	0.50 EA	0.00 0	0.00 0	0.00 0	300.00 150	300.00 150	300.00
USR S1 40 Hour Site Specific Training	2.00 EA	0.00 0	0.00 0	0.00 0	1200.00 2,400	1200.00 2,400	1200.00
USR S1 Fundamentals of Radiation Safety	2.00 EA	0.00 0	0.00 0	0.00 0	600.00 1,200	600.00 1,200	600.00
TOTAL Personnel Training		0 -----	0 -----	0 -----	3,750 -----	3,750 -----	
TOTAL Contaminated Soil Collection		4,147 -----	1,100 -----	213 -----	3,750 -----	9,209 -----	
TOTAL Solids Collection & Containment		4,147 -----	1,100 -----	213 -----	3,750 -----	9,209 -----	

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18. Disposal (Other than Commercial)

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18.21. Trans. to Storage/Disp. Facility	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
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18. Disposal (Other than Commercial)
18.21. Trans. to Storage/Disp. Facility

Note:

This is the cost of transporting the contaminated waste from the queue area to the ERDF facility. These costs are covered in the ERDF ADS. In the event that the ERDF transportation costs are desired in this model this feature may be changed to provide the cost for ERDF Transportation.

Material density used is 1.73 ton/BCY (1.5 ton/LCY @ 15% swell).
Demolition waste density = 1.27 ton/lcy @ 150 lbs/CF and 60% swell.

Material to be transported is contaminated soil and demolition waste. The limit per truck is 19.3 Tons.

The unit cost per ton (\$14.30) does not include DD and G&A.

TOTAL Trans. to Storage/Disp. Facility	TON	0	0	0	0	0
--	-----	---	---	---	---	---

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18. Disposal (Other than Commercial)

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18.22. ERDF Disposal Costs	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
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18.22. ERDF Disposal Costs

Notes:

Disposal fees are covered in the ERDF ADS except if other disposal areas are used that require a fee. In that case, a per ton cost will be entered here to include the disposal costs associated with the individual waste site. Also, in the event that the ERDF fees are required to be in this model (FFS estimates for example) this model can be changed to show this cost for the ERDF disposal fees.

The current rate in the model is \$14.26/Ton. (without DD and G&A)

TOTAL ERDF Disposal Costs	TON	0	0	0	0	0
TOTAL Disposal (Other than Commercial)		0	0	0	0	0

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20. Site Restoration

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20.01. Earthwork	QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>									
20. Site Restoration									
20.01. Earthwork									
20.01.03. Load/Haul Borrow (Backfill)									
Assumptions:									
1. Assume borrow available on-site. No charge for material.									
2. 10% added to account for compaction.									
3. Hauling speed is 30 mph. Return speed is 40 mph.									
4. Truck capacity is 15 loose cu yd, based on the following:									
- Average soil density at Hanford = 1.73ton/BCY									
- Weight limit on Hanford roads = 80,000 lbs									
- Weight of dump truck = 30,000 lbs									
5. Truck dump time is 1.5 minutes.									
6. Dust control is not covered here because it is covered in the placement item. One water truck will cover both.									
Output:									
1. 219 LCY per crew hour (this is an 8 hr/day rate working 6.5 hr/shift)									
This rate is driven by the capacity of a 4.5 LCY loader.									
BLT S1 Heavy Equipment Operator - 1 ea	0.06	HR	11788	33.74	0.00	0.00	0.00	33.74	
UPB S1 Ldr,FE, WH, 4.50 CY, Artic, 966E (1 ea)	0.06	HR	L40CA006	0.00	59.79	0.00	0.00	59.79	
BLT S1 Heavy Truck Driver Quantity calculated by parameter worksheet.	0.24	HR	11792	34.51	0.00	0.00	0.00	34.51	
MIL S1 Trk,Off-Hwy,R-Dump, 15-19CY, 25T (number of trucks is determined by the NUMTRK Parameter)	0.24	HR	T55DJ002	0.00	34.06	0.00	0.00	34.06	
TOTAL Load/Haul Borrow (Backfill)	13.00	LCY		10	12	0	0	22	1.68

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20. Site Restoration

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20.01. Earthwork	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST

20.01.06. Spreading (Spread/Comp. Borrow)							
Activity:							
Spreading and compacting the stockpiled Non-Contaminated Soil and borrow.							
Output:							
219 LCY per crew hour.							
BLT S1 Heavy Truck Driver (1 ea) - 1 ea	0.06 HR 11792	34.51 2	0.00 0	0.00 0	0.00 0	34.51 2	34.51
FPC S1 Trk,Wtr,Off-Hwy, 6000GAL,Cat621E 6000 GALLON WITH CAT 621E TRAC - 1 ea	0.06 HR T60KI002	0.00 0	60.15 4	0.00 0	0.00 0	60.15 4	60.15
BLT S1 Heavy Equipment Operator (1 ea) - 1 ea	0.06 HR 11788	33.74 2	0.00 0	0.00 0	0.00 0	33.74 2	33.74
GEN S1 DOZER, CRWLR, 251-300 HP (187-224 KW), PS (W/ U BLADE) (1 ea)	0.06 HR T15Z6560	0.00 0	59.43 4	0.00 0	0.00 0	59.43 4	59.43
TOTAL Spreading (Spread/Comp. Borrow)	13.00 LCY	----- 4	----- 7	----- 0	----- 0	----- 11	0.86
TOTAL Earthwork		----- 14	----- 19	----- 0	----- 0	----- 33	

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Trench Model (Small) - Rev. 1 (TRSM01)
20. Site Restoration

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20.04. Revegetation and Planting	QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
20.04. Revegetation and Planting									
20.04.01. Mech. Seeding with Fertilizer and Mulch									
Notes:									
1. Seeding is assumed to occur during Sept.-Nov. timeframe.									
2. Seed/Mulch/Fertilizer cost is \$330/acre (excluding sales tax)									
Output:									
1. Production Rate = 1 Acre/crew hour									
BLT S1 Operating Engineers (1 ea)				33.74	0.00	0.00	0.00	33.74	
	0.15 HR	11788		5	0	0	0	5	33.74
USR S1 4 Wheel Drive Tractor (Farm) (1 ea)				0.00	7.50	0.00	0.00	7.50	
	0.15 HR	YA2		0	1	0	0	1	7.50
USR S1 Mulch Spreader (1 ea)				0.00	1.83	0.00	0.00	1.83	
	0.15 HR	YA3		0	0	0	0	0	1.83
USR S1 Tiller (1 ea)				0.00	1.25	0.00	0.00	1.25	
	0.15 HR	YA4		0	0	0	0	0	1.25
USR S1 Primary Seeder (1 ea) (Combines Seed Drill and Crimper)				0.00	1.32	0.00	0.00	1.32	
	0.15 HR	YA5		0	0	0	0	0	1.32
M USR S1 Seed, Fertilizer and Mulch				0.00	0.00	356.40	0.00	356.40	
	0.15 ACR			0	0	52	0	52	356.40
TOTAL Mech. Seeding with Fertilizer	0.15 ACR			5	2	52	0	59	402.04

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20. Site Restoration

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20.04. Revegetation and Planting	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST

20.04.04. Shrubs/Trees/Groundcover							
Note: Tubling planning of sage brush seedlings @ \$0.80/each. 1. Planting density is 400/acre 2. Planting is assumed to occur during Sept-Nov. timeframe 3. Productivity = 60 seedlings/crewmember/hour 4. Output = 1 acre per crew hour 5. Tubling cost = \$320/acre (excluding sales tax)							
BLT S1 Laborers (6 ea)	0.88 HR 11786	29.73 26	0.00 0	0.00 0	0.00 0	29.73 26	29.73
L BLT S1 Grade 23 Supervision (1 EA)	0.15 HR 11786	29.73 4	0.00 0	0.00 0	0.00 0	29.73 4	29.73
UPB S1 Trk,Hwy, 8,800GVW,4X4, 3/4T-Pkup (1 ea)	0.15 HR T50FO004	0.00 0	7.66 1	0.00 0	0.00 0	7.66 1	7.66
UPB S1 Small tools (6 ea)	0.88 HR XMIXX020	0.00 0	1.57 1	0.00 0	0.00 0	1.57 1	1.57
USR S1 Tubling Cost	0.15 ACR	0.00 0	0.00 0	345.60 50	0.00 0	345.60 50	345.60
TOTAL Shrubs/Trees/Groundcover	0.15 ACR	30	2	50	0	83	570.79

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20.04. Revegetation and Planting	QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>									
20.04.91. Irrigation									
The following assumptions is used to calculate an allowance for irrigation costs. Actual site location, conditions and available water sources will determine the most cost effective application of water.									
Parameters supplied by Ecology (January 28, 2000): Irrigate site 4 times in late Spring/early Summer (over a 2 month timeframe). Total application per site: 1.5 inch of water/acre or 40,731 gal of water/acre.									
Crew Output: 0.061 acre per hour, based on 1.6 hrs cycle time per truck (assumes water source 5 miles from site).									
BLT S1 Truck Driver - 1 ea	2.40	HR	11792	34.51 83	0.00 0	0.00 0	0.00 0	34.51 83	34.51
MIL S1 Trk,Hwy, 43,000 GVW, 6X4, 3 Axle (1 ea)	2.40	HR	T50FO013	0.00 0	22.21 53	0.00 0	0.00 0	22.21 53	22.21
MIL S1 Trlr,Water Tanker,4000Gal (1 ea) (ADD TOWING TRUCK)	2.40	HR	T45XX029	0.00 0	9.22 22	0.00 0	0.00 0	9.22 22	9.22
USR S1 10,000 gal holding tank w/gas powered pump (1 ea)	2.00	MO		0.00 0	300.00 600	0.00 0	0.00 0	300.00 600	300.00
USR S1 2" Dist. lines w/ Sprinkler Hds.	0.15	ACR		0.00 0	0.00 0	0.00 0	2000.00 292	2000.00 292	2000.00
TOTAL Irrigation	0.15	ACR		83	675	0	292	1,050	7187.60
TOTAL Revegetation and Planting				118	679	103	292	1,192	
TOTAL Site Restoration				132	698	103	292	1,225	

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21.01. Removal of Temporary Facilities	QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST

21. Demobilization									
Note:									
Because multiple sites will be cleaned up within an operable unit and a cost for mobilization between sites is already included, no allowance for demobilization is made. Only the the following costs for removal of are included here:									
1. Removal of fencing 2. Removal of decontamination area 3. Scarify new roads 4. Misc. Cleanup allowance 5. Post construction submittals 6. Final Topo									
21.01. Removal of Temporary Facilities									
21.01. 5. Remove Decontamination Area									
Note:									
The duration of this activity is assumed to be 2/3 of the Decontamination Area erection time. Erection time was 24 hrs. Therefore removal time is 24 x .67 = 16 hrs.									
BLT S1 Laborers (3 ea)	48.00	HR	11786	29.73 1,427	0.00 0	0.00 0	0.00 0	29.73 1,427	29.73
UPB S1 Small Tools (3 ea)	48.00	HR	XMIXX020	0.00 0	1.57 75	0.00 0	0.00 0	1.57 75	1.57
GEN S1 LOADER/BH, WH, 0.80 CY (0.6 M3), F/E BKT 30" (762 MM) DIPPER (1 ea.)	16.00	HR	L50Z4640	0.00 0	12.72 204	0.00 0	0.00 0	12.72 204	12.72
BLT S1 Operating Engineers (1 ea)	16.00	HR	11788	33.74 540	0.00 0	0.00 0	0.00 0	33.74 540	33.74
MIL S1 Trk,Off-Hwy,R-Dump, 15-19CY, 25T (1 ea)	16.00	HR	T55DJ002	0.00 0	34.06 545	0.00 0	0.00 0	34.06 545	34.06
BLT S1 Truck Driver (1 ea)	16.00	HR	11792	34.51 552	0.00 0	0.00 0	0.00 0	34.51 552	34.51
TOTAL Remove Decontamination Area	16.00	HRS		2,519	824	0	0	3,343	208.93

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21.01. Removal of Temporary Facilities	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
21.01.11. Barricades (Remove Temp. Fence)							
Notes:							
1. It was assumed that the fence could be removed twice as fast installing it. Installation rate was 100 LF/Hr, therefore the dismantling rate is 200 LF/Hr.							
2. It was assumed that the removal crew is 2 laborers. Installation and removal require a flatbed truck with a driver (teamster)							
BLT S1 Laborers (2 ea)	3.20 HR 11786	29.73 95	0.00 0	0.00 0	0.00 0	29.73 95	29.73
UPB S1 Small Tools (2 ea)	3.20 HR XMIXX020	0.00 0	1.57 5	0.00 0	0.00 0	1.57 5	1.57
BLT S1 Truck Drivers (1 ea)	1.60 HR 11792	34.51 55	0.00 0	0.00 0	0.00 0	34.51 55	34.51
MIL S1 Trk,Hwy,10,000GVW,4X2, 1T-Pickup (1 ea)	1.60 HR T50FO005	0.00 0	7.88 13	0.00 0	0.00 0	7.88 13	7.88
MAP S1 FLATBED, 8'x 12.0', W/SIDE RACKS (ADD TRUCK) - 1 ea.	1.60 HR T40KF014	0.00 0	0.70 1	0.00 0	0.00 0	0.70 1	0.70
TOTAL Barricades (Remove Temp. Fence)	320.00 LF	150	19	0	0	169	0.53

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21.01. Removal of Temporary Facilities	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>							
21.01.25. Roads & Parking (Scarify Roads)							
Notes: The following is an allowance based on a 12G grader with a 5 shank ripper/scarifier. Assumed two passes on road. Total job assumed to be 30 minutes.							
BLT S1 Operating Engineers (1 ea)	0.50 HR 11788	33.74 17	0.00 0	0.00 0	0.00 0	33.74 17	33.74
UPB S1 Grader, Motor, Artic, Cat 12-G (1 ea)	0.50 HR G15CA003	0.00 0	32.02 16	0.00 0	0.00 0	32.02 16	32.02
USR S1 5 Shank Ripper/Scarifyer (1 ea) for 12G Grader (Blue Book)	0.50 HR YA6	0.00 0	1.18 1	0.00 0	0.00 0	1.18 1	1.18
TOTAL Roads & Parking (Scarify Roads)	0.50 HRS	----- 17	----- 17	----- 0	----- 0	----- 33	66.94

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21. Demobilization

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21.01. Removal of Temporary Facilities	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST

21.01.91. Misc. Cleanup Allowance							
Notes:							
Activity includes 2 laborers and a flatbed truck with driver for 8 hours to perform misc. cleanup activities around the site.							
BLT S1 Laborers (2 ea)	16.00 HR 11786	29.73 476	0.00 0	0.00 0	0.00 0	29.73 476	29.73
UPB S1 Small Tools (2 ea)	16.00 HR XMIXX020	0.00 0	1.57 25	0.00 0	0.00 0	1.57 25	1.57
BLT S1 Truck Drivers (1 ea)	8.00 HR 11792	34.51 276	0.00 0	0.00 0	0.00 0	34.51 276	34.51
MIL S1 Trk,Hwy,10,000GVW,4X2, 1T-Pickup (1 ea)	8.00 HR T50FO005	0.00 0	7.88 63	0.00 0	0.00 0	7.88 63	7.88
MAP S1 FLATBED, 8'x 12.0', W/SIDE RACKS (ADD TRUCK) - 1 ea.	8.00 HR T40KF014	0.00 0	0.70 6	0.00 0	0.00 0	0.70 6	0.70
TOTAL Misc. Cleanup Allowance	8.00 HRS	752	94	0	0	846	105.70
TOTAL Removal of Temporary Facilities		3,438	953	0	0	4,391	

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21. Demobilization

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21.06. Submittals	QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>									
21.06. Submittals									
21.06.05. Post Construction Submittals									
Note:									
This is an allowance of \$5,000.									
TOTAL Post Construction Submittals				0	0	0	5,000	5,000	

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21. Demobilization

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21.06. Submittals	QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
<hr/>									
21.06.06. As Built Drawings (Final Topo)									
Note: This is an allowance of \$1,600.									
TOTAL As Built Drawings (Final Topo)				0	0	0	1,600	1,600	
TOTAL Submittals				0	0	0	6,600	6,600	
TOTAL Demobilization				3,438	953	0	6,600	10,991	

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70. Project/Construction Mgmt & Supt

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			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
70. Project/Construction Mgmt & Supt											
ERC AB	ERC Cost/Scheduling Engineer (2.69 hours per day of project duration)		37.66	HR	21000	57.91 2,181	0.00 0	0.00 0	0.00 0	57.91 2,181	57.91
ERC AB	ERC Design Engineer (1.72 hours per day of project duration)		24.08	HR	32000	70.82 1,705	0.00 0	0.00 0	0.00 0	70.82 1,705	70.82
ERC AB	ERC Project Engineer (2.27 hours per day of project duration)		31.78	HR	32000	70.82 2,251	0.00 0	0.00 0	0.00 0	70.82 2,251	70.82
ERC AB	ERC Procurement (1.65 hours per day of project duration)		23.10	HR	41000	52.21 1,206	0.00 0	0.00 0	0.00 0	52.21 1,206	52.21
ERC AB	ERC Project Management (3.34 hours per day of project duration)		46.76	HR	51000	88.17 4,123	0.00 0	0.00 0	0.00 0	88.17 4,123	88.17
ERC AB	ERC Quality Assurance (0.54 hours per day of project duration)		7.56	HR	52000	71.63 542	0.00 0	0.00 0	0.00 0	71.63 542	71.63
ERC AB	ERC Field Support (8.52 hours per day of project duration)		119.28	HR	53000	55.36 6,603	0.00 0	0.00 0	0.00 0	55.36 6,603	55.36
ERC AB	ERC Administrative Services (1.41 hours per day of project duration)		19.74	HR	55000	32.04 632	0.00 0	0.00 0	0.00 0	32.04 632	32.04
ERC AB	ERC Rad Con Engineer (0.46 hours per day of project duration)		6.44	HR	35000	71.63 461	0.00 0	0.00 0	0.00 0	71.63 461	71.63
ERC AB	ERC Safety Engineer (1.42 hours per day of project duration)		19.88	HR	58000	62.78 1,248	0.00 0	0.00 0	0.00 0	62.78 1,248	62.78
TOTAL Project/Construction Mgmt & Supt						20,952	0	0	0	20,952	

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PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACE
Trench Model (Small) - Rev. 1 (TRSM01)
XXX. Estimate Quantities (TRSM01)

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XXX.XX. Input Quantities			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
XXX. Estimate Quantities (TRSM01)											
XXX.XX. Input Quantities											
USR	Non-Contaminated Soil		187.00	BCF		0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
USR	Contaminated Soil		320.00	BCF		0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
USR	Top Excavation Length		26.00	LF		0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
USR	Top Excavation Width		14.00	LF		0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
USR	Bottom Area		160.00	SF		0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
USR	Hauling Distance for Borrow		2.00	MI		0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
USR	Depth of Excavation		2.00	LF		0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
TOTAL Input Quantities				Y/N		0	0	0	0	0	0

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XXX. Estimate Quantities (TRSM01)

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XXX.YY. Additional Quantities	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
TOTAL Additional Quantities		0	0	0	0	0	
TOTAL Estimate Quantities (TRSM01)		0	0	0	0	0	
TOTAL HANFORD: ER PROGRAM		32,858	3,391	4,733	43,450	84,432	

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** PROJECT DIRECT SUMMARY - FEATURE **

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SUMMARY PAGE 1

	QUANTITY UOM	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST	UNIT COST
01 Mobilization & Prep Work	3,251	640	4,385	1,608	9,884		
02 Monitoring, Sampling, & Analysis	938	0	32	31,200	32,170		
08 Solids Collection & Containment	4,147	1,100	213	3,750	9,209		
20 Site Restoration	132	698	103	292	1,225		
21 Demobilization	3,438	953	0	6,600	10,991		
70 Project/Construction Mgmt & Supt	20,952	0	0	0	20,952		
TOTAL HANFORD: ER PROGRAM	32,858	3,391	4,733	43,450	84,432		
FIELD OH	3.46 %				2,922		
SUBTOTAL HOME OFC	1.00 %				87,354		
SUBTOTAL PROFIT	2.32 %				88,231		
SUBTOTAL BOND	0.97 %				2,045		
SUBTOTAL B&O TAX	0.19 %				90,276		
TOTAL INCL INDIRECTS DIR DIST	22.38 %				877		
SUBTOTAL G & A	3.93 %				91,152		
TOTAL INCL OWNER COSTS					169		
					91,321		
					20,438		
					111,759		
					4,392		
					116,151		

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** CONTRACTOR DIRECT SUMMARY **

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SUMMARY PAGE 2

	QUANTITY UOM	LABOR	EQUIPMNT	MAT/SUPP	UNITCOST	TOTAL COST
AB No Markup Items	23,981	0	32	31,200	55,213	
S1 Prime Contractor	8,877	3,391	4,700	12,250	29,219	

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** CONTRACTOR INDIRECT SUMMARY **

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SUMMARY PAGE 3

	TOTAL DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	B&O TAX	TOTAL COST	UNIT COST
AB No Markup Items	55,213	0	0	0	0	0	55,213	
S1 Prime Contractor	29,219	2,922	877	2,045	877	169	36,108	

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** LABOR BACKUP **

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BACKUP PAGE 1

SRC LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRLV	RATE	UOM	UPDATE	DEFAULT	**** TOTAL **** HOURS
HAM 10T17	RAD CON TECH (THI)	57.98	0.0%	0.0%	0.00	0.00	57.98	HR	02/02/00	0.00	26
BLT 11786	LABORERS (S/C)	29.73	0.0%	0.0%	0.00	0.00	29.73	HR	02/09/00	0.00	163
BLT 11788	OPERATING ENGINEERS (S/C)	33.74	0.0%	0.0%	0.00	0.00	33.74	HR	02/09/00	0.00	41
BLT 11792	TEAMSTERS (S/C)	34.51	0.0%	0.0%	0.00	0.00	34.51	HR	02/09/00	0.00	56
ERC 21000	ERC PLANNING & CONTROLS	57.91	0.0%	0.0%	0.00	0.00	57.91	HR	02/02/00	0.00	38
ERC 31000	ERC ENVIRON SPCLST & LEADS	67.63	0.0%	0.0%	0.00	0.00	67.63	HR	02/04/00	0.00	4
ERC 31751	ERC SAMPLE & DATA MANAGEMENT	43.72	0.0%	0.0%	0.00	0.00	43.72	HR	02/02/00	0.00	2
ERC 32000	ERC DESIGN ENGINEERING AVG	70.82	0.0%	0.0%	0.00	0.00	70.82	HR	02/04/00	0.00	56
ERC 35000	ERC ENVIRONMENTAL COMPLIANCE	71.63	0.0%	0.0%	0.00	0.00	71.63	HR	02/02/00	0.00	6
ERC 41000	ERC PROCUREMENT	52.21	0.0%	0.0%	0.00	0.00	52.21	HR	02/02/00	0.00	23
ERC 51000	ERC PROJECT MANAGEMENT	88.17	0.0%	0.0%	0.00	0.00	88.17	HR	02/02/00	0.00	47
ERC 52000	ERC QA (ENVIR COMPLIANCE 35700)	71.63	0.0%	0.0%	0.00	0.00	71.63	HR	02/02/00	0.00	8
ERC 53000	ERC FIELD SUPPORT AVG	55.36	0.0%	0.0%	0.00	0.00	55.36	HR	02/04/00	0.00	119
ERC 55000	ERC ADMINISTRATIVE SERVICES	32.04	0.0%	0.0%	0.00	0.00	32.04	HR	02/02/00	0.00	20
ERC 58000	ERC SAFTY AND HEALTH AVG	62.78	0.0%	0.0%	0.00	0.00	62.78	HR	02/04/00	0.00	20

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** EQUIPMENT BACKUP **

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SRC	ID.NO.	EQUIPMENT DESCRIPTION	DEPR	FCCM	FUEL	FOG	TR WR	TR REP	EQ REP	** TOTAL **	
										TOTAL RATE	HOURS
EP	G15CA003	GRADER,MOTOR, ARTIC, CAT 12-H	10.60	3.47	3.99	1.60	0.47	0.08	11.82	32.02 HR	1
EP	H25HI011	HYD EXCAV, CRWLR, 90,200 LBS,	31.08	7.89	8.99	3.99			36.77	88.72 HR	0
MAP	L40CA006	LDR,FE, WH, 4.50 CY, ARTIC, 966F	19.33	4.80	6.68	3.34	3.76	0.63	21.26	59.79 HR	0
GEN	L50Z4640	LOADER/BCK-HOE,WH, 0.80CY(0.6M3)	3.73	0.94	1.82	0.69	0.72	0.12	4.70	12.72 HR	40
GEN	T15Z6560	DOZER, CRAWLER, 251-300HP	16.21	6.01	10.10	3.36			23.75	59.43 HR	0
MAP	T40KF014	FLATBED, 8'x 12.0', W/SIDE RACKS	0.34	0.06					0.30	0.70 HR	13
EP	T45XX029	TRLR,WATER TANKER,4000GAL	2.85	0.77	1.91	0.53	0.22	0.04	2.89	9.22 HR	2
MAP	T50FO004	TRK,HWY, 8,800GVW,4X4, 3/4T-PKUP	1.93	0.35	2.28	0.76	0.34	0.06	1.96	7.66 HR	24
EP	T50FO005	TRK,HWY,10,000GVW,4X2, 1T-PICKUP	1.96	0.36	2.28	0.76	0.46	0.08	2.00	7.88 HR	13
EP	T50FO013	TRK,HWY, 43,000 GVW, 6X4, 3 AXLE	6.18	1.13	6.39	2.13	0.80	0.13	5.44	22.21 HR	2
EP	T50PE002	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE	9.86	1.83	10.65	3.55	1.73	0.29	8.71	36.62 HR	24
EP	T55DJ002	TRK,OFF-HWY,R-DUMP, 13.7-18CY,	10.13	4.84	4.13	1.65	4.09	0.68	8.52	34.06 HR	17
MAP	T60KI002	TRK,WTR,OF-HY, 6000GAL,W/CAT621E	18.24	4.93	10.02	3.78	3.45	0.57	19.16	60.15 HR	0
EP	W25SD005	WATER BLASTR, COLD WTR, 2500 PSI	0.88	0.09	1.16	0.32			1.42	3.87 HR	8
NON	XMIIXX020	SMALL TOOLS	0.50	0.22	0.16	0.07			0.63	1.57 HR	170
USR	YA1	20 Ton Tilt Trailer	3.28						3.28	HR	24
USR	YA2	4 Wheel Drive Tractor (Farm)	7.50						7.50	HR	0
USR	YA3	Mulch Spreader	1.83						1.83	HR	0
USR	YA4	Tiller	1.25						1.25	HR	0
USR	YA5	Primary Seeder	1.32						1.32	HR	0
USR	YA6	5 Shank Ripper/Scarifyer	1.18						1.18	HR	1

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Eff. Date 02/22/00
ERROR REPORT

U.S. Army Corps of Engineers
PROJECT 300-22: HANFORD: ER PROGRAM - REMEDIATION - 300 Area ACP
Trench Model (Small) - Rev. 1 (TRSM01)

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R2032: 021005 Groundwater Detail item has zero quantity - no costs reported
R2032: 08019102 Water Dispos Detail item has zero quantity - no costs reported
R2032: 1821 ERDF Transpo Detail item has zero quantity - no costs reported
R2032: 1822 Disposal Fac Detail item has zero quantity - no costs reported
R2032: 70 ERC Environm Detail item has zero quantity - no costs reported
R2032: XXXXX Groundwater Detail item has zero quantity - no costs reported
R2032: XXXXX Include ERDF Detail item has zero quantity - no costs reported
R2032: XXXYY Duration of Detail item has zero quantity - no costs reported

* * * END OF ERROR REPORT * * *

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